

Storage rack frame

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Inventor:

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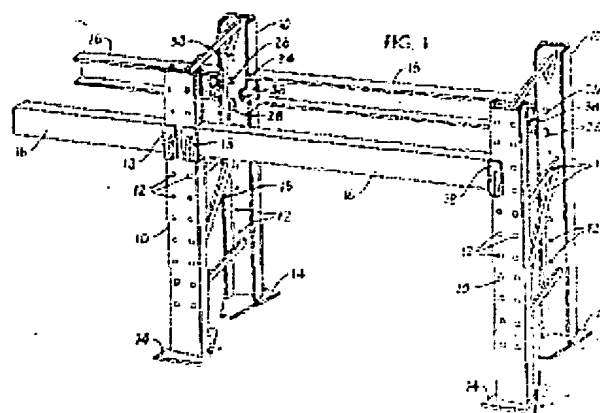
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Abstract of **GB1064087**

1,064,087. Racks. W. H. NOVALES and J. K. KAYARIAN. Nov. 4, 1965 [Jan. 6, 1965; March 4, 1965], No. 46819/65. Heading A4B. [Also in Division E2] A storage rack has uprights 10 provided with pairs of holes 12 and beams 16 to each end of which is welded a piece of angle shaped metal 18 provided with lugs 26, 28 to engage in the pairs of holes 12. A latch member 38 pivoted to the beam engages with a flange of the upright to prevent inadvertent disengagement of the parts.



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PATENT SPECIFICATION

1,064,087

DRAWINGS ATTACHED.

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Nov. 4, 1965.

No. 46819/65.

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Index at Acceptance:—A4 B(7A2, 7C1); E2 A(D5C1, E14U).

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COMPLETE SPECIFICATION.

Storage Rack Frame.

We, WILLIAM HENRY NOVALES and JACQUES KEVORAK KAYARIAN, both citizens of the United States of America, of 1380, Yerba Buena Avenue, Emeryville 8, California, United States of America and 5726, Tehama Avenue, Richmond, California, United States of America, respectively, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates in general to a storage rack frame and more particularly to such a frame in which the horizontal beams and vertical rails constituting rack supports are locked into a unitary relationship.

Industrial storage racks are often inadvertently disassembled, for example, when items are being loaded or unloaded onto or from the beams. This usually happens because of carelessness on the part of a fork-lift truck operator who permits part of the load, or perhaps a pallet or a fork member to strike one of the upright rails or horizontal beams from which the rack frame has been assembled. To eliminate collapse of beams, safety engineers generally insist upon the use of bolts and nuts so as to secure the structural elements firmly together. However, the use of bolts and nuts makes assembly and disassembly more difficult and it is often observed that the nuts and bolts are left out or become loosened in time.

In an effort to speed assembly of rack frames, various arrangements utilizing studs or lugs and holes in one or another of the members have been devised. These generally rely upon a wedging action which makes the structural elements difficult to disassemble, but still liable to collapse should they receive a sharp blow, for example, during the load-

ing or unloading operation. It is also generally observed that the more sophisticated systems which dispense with bolts and nuts require the use of fabricated box channels which must be punched in the open and then bent or roll-formed. This precludes using the standard structural channel or other structural sections which are relatively inexpensive, thus raising the cost of these assemblies up considerably.

Efforts have been made to provide a substitute for the customary bolt by mounting pins directly on one or another of the members constituting the frame, which pins must then be manually forced into place in a corresponding hole in one or another of the members. The assemblers, however, often leave the pins out or find that they do not slide readily into place, and the safety feature is thereby defeated. The lugs readily become disengaged if a rail or beam is moved during a loading or unloading operation and the rack beams, which may support several tons, sometimes collapse. Another disadvantage is that loose pins, wedges or other manual locking devices may be lost before assembly and therefore not made use of to secure the assemblies with any measure of safety.

It is therefore an object of this invention to provide an improved storage rack frame.

According to the present invention there is provided a rack frame comprising horizontal beam members and vertical rail members, means for joining a horizontal beam member and a vertical rail member, each of said means including at least one hole in one of said members; at least one lug integral with the other of the said members, said lug being sized to register with the said hole and a pivotally mounted latch on the other of the said members, said latch having at least two

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